Proposed Item for Biobased Designation

The following biobased product information has been collected to support item designation by USDA for the BioPreferred Program. This summary reflects data available as of June 15, 2009.

Title: Dethatchers

Description: Products used to remove non-decomposed plant material accumulated in grassy areas.

Companies Supplying Item: 15 companies supplying Dethatchers have been identified through internet searches, manufacturer's directories, trade associations, and company submissions.

Industry Associations Investigated: The following industry associations have been investigated for member companies supplying Dethatchers:

- United Soybean Board Association
- National Corn Growers Association
- Professional Lawn Care Association of America
- National Gardening Association

Commercially Available Products Identified: Of the companies identified, 16 Dethatchers are commercially available on the market.

Product Information Collected: Specific product information including company contact, intended use, biobased content, and performance characteristics have been collected on 2 Dethatchers.

Industry Performance Standards: Product information submitted by biobased manufacturers and suppliers indicate that have typically been tested to the following industry standards:

- No Results

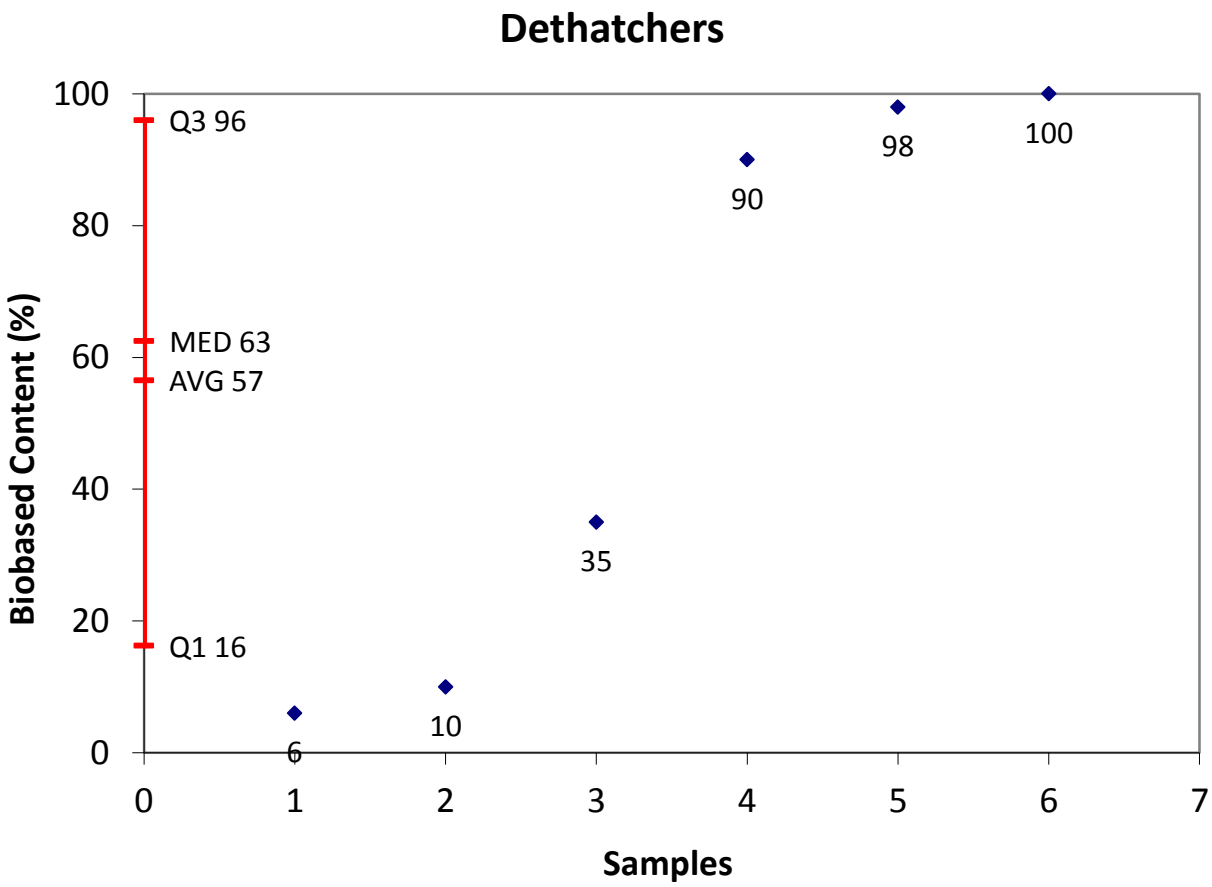
Samples Tested for Biobased Content: 6 samples of Dethatchers have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866.

Biobased Content Data: Results from biobased content testing of Dethatchers indicate a range of content percentages from 6% minimum to 100% maximum biobased content as defined by ASTM D6866. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 3 Dethatchers have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Dethatchers range from $44.00 minimum to $160.54 maximum per usage unit. The environmental scores range from 0.0534 minimum to 0.5798 maximum. A detailed summary of the BEES results is included as Appendix B.

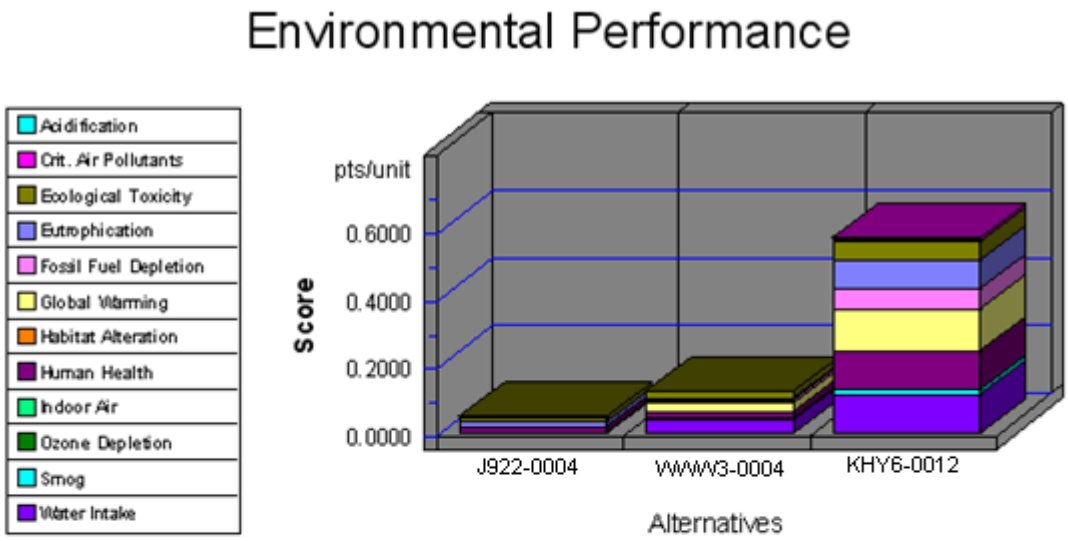
Appendix A - Biobased Content Data



	Company	Product	C14	BEES
1	WWW3	WWW3-0004	6	Yes
2	XRR6	XRR6-0001	10	
3	KHY6	KHY6-0012	35	Yes
4	CH23	CH23-0016	90	
5	J922	J922-0004	98	Yes
6	RS9R	RWKN-0001	100	

Appendix B - BEES Analysis Results

Functional Unit: 1 acre of coverage for 1 year



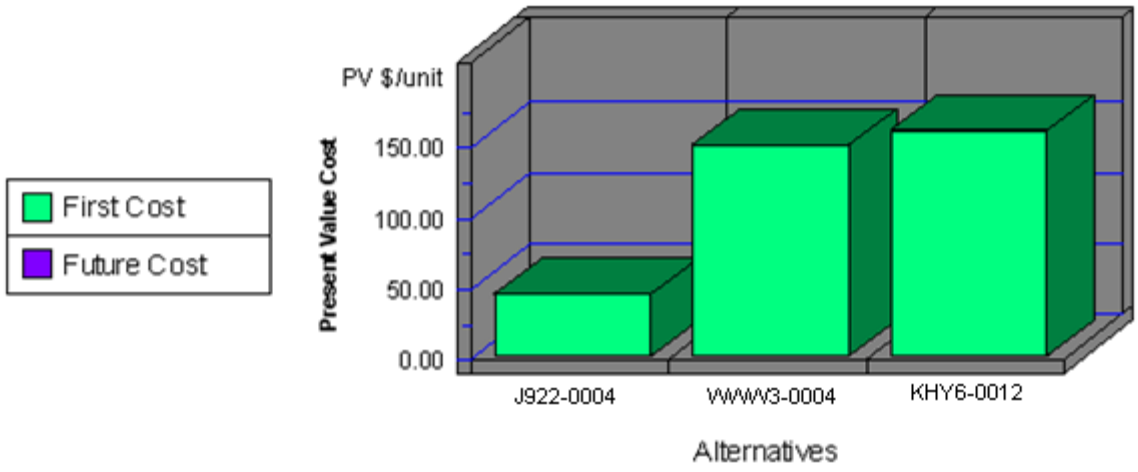
Note: Lower values are better

Category	J922-0004	WWW3-0004	KHY6-0012
Acidification--3%	0.0000	0.00000	0.0000
Crit. Air Pollutants--9%	0.0007	0.00120	0.0129
Ecolog. Toxicity--7%	0.0156	0.01940	0.0529
Eutrophication--6%	0.0127	0.00160	0.0833
Fossil Fuel Depl.--10%	0.0039	0.01450	0.0613
Global Warming--29%	0.0003	0.02260	0.1227
Habitat Alteration--6%	0.0000	0.00000	0.0000
Human Health--13%	0.0140	0.02080	0.1167
Indoor Air--3%	0.0000	0.00000	0.0000
Ozone Depletion--2%	0.0000	0.00000	0.0000
Smog--4%	0.0022	0.00480	0.0147
Water Intake--8%	0.0040	0.04130	0.1153
Sum	0.0534	0.1262	0.5798

Dethatcher Products				
Impacts	Units	J922-0004	WWW3-0004	KHY6-0012
Acidification	millimoles H^+ equivalents	5.60E+03	1.10E+04	7.45E+04
Criteria Air Polutants	microDALYs	1.45E+00	2.61E+00	2.75E+01
Ecotoxicity	g 2,4-D equivalents	1.82E+02	2.26E+02	6.16E+02
Eutrophication	g N equivalents	4.06E+01	5.06E+00	2.67E+02
Fossil Fuel Depletion	MJ surplus energy	1.38E+01	5.14E+01	2.16E+02
Global Warming	g CO_2 equivalents	2.67E+02	1.99E+04	1.08E+05
Habitat Alteration	T&E count	0.00E+00	0.00E+00	0.00E+00
Human Health--Cancer	g C_6H_6 equivalents	8.88E+00	1.27E+01	7.34E+01
Human Health--NonCancer	g C_7H_8 equivalents	1.21E+04	4.37E+04	1.38E+05
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	2.44E-05	1.37E-05	3.37E-05
Smog	g NO_x equivalents	8.25E+01	1.83E+02	5.56E+02
Water Intake	liters of water	2.63E+02	2.74E+03	7.64E+03
Functional Unit	----------	1 acre of coverage for one year		

1 Following are more complete descriptions of units: Acidification: millimoles of hydrogen ion equivalents; Criteria Air Pollutants: micro Disability-Adjusted Life Years; Ecological Toxicity: grams of 2,4-dichlorophenoxy-acetic acid equivalents; Eutrophication: grams of nitrogen equivalents; Fossil Fuel Depletion: megajoules of surplus energy; Global Warming: grams of carbon dioxide equivalents; Habitat Alteration: threatened and endangered species count;Human Health-Cancer: grams of benzene equivalents; Human Health-NonCancer: grams of toluene equivalents; Indoor Air Quality: grams of Total Volatile Organic Compounds; Ozone Depletion: grams of chloroflourocarbon-11 equivalents; Smog: grams of nitrogen oxide equivalents; and Water Intake: liters of water.

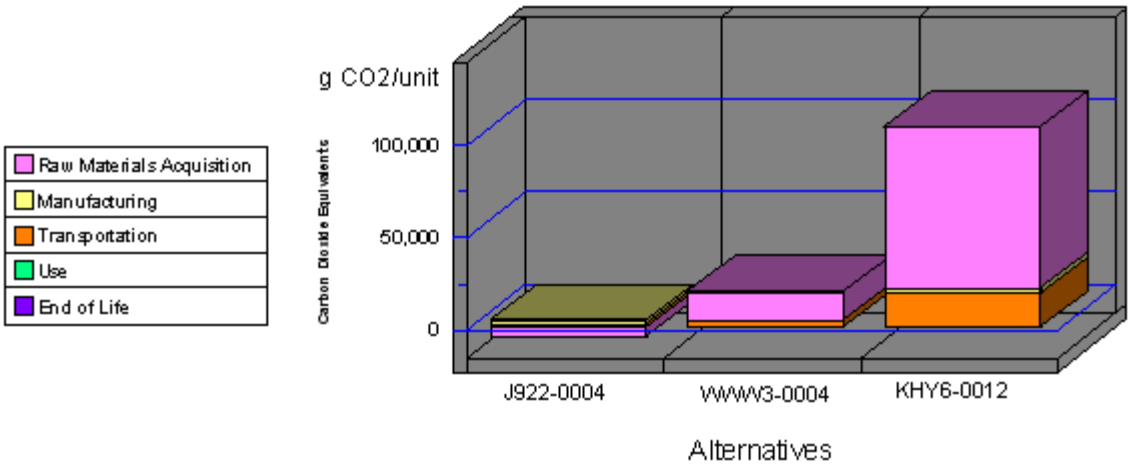
Economic Performance



Category	J922-0004	WWW3-0004	KHY6-0012
First Cost	44.00	149.98	160.54
Future Cost– 3.0%	0.00	0.00	0.00
Sum	44.00	149.98	160.54

*This is a consumable product. Therefore, future costs are not calculated.

Global Warming by Life-Cycle Stage



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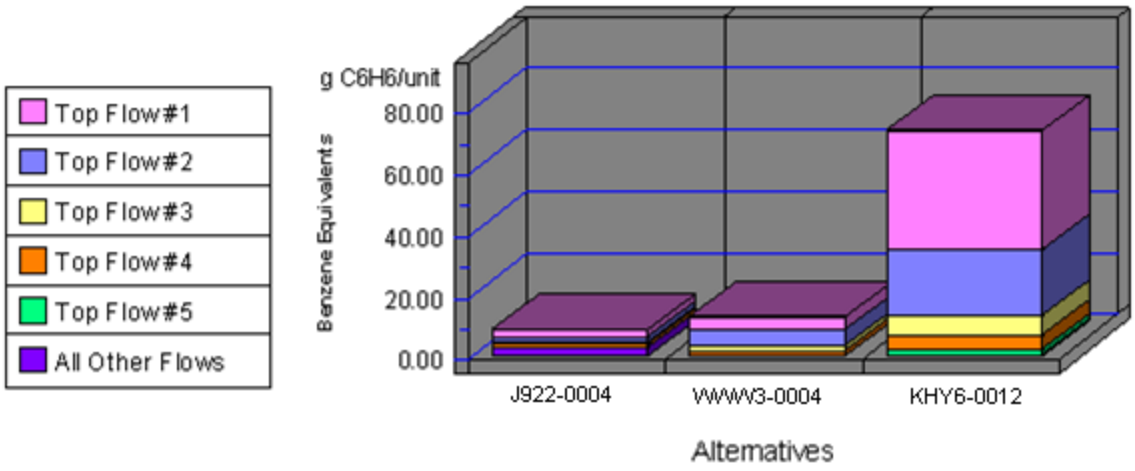
Category	J922-0004	WWW3-0004	KHY6-0012
1. Raw Materials	-4095	15302	87181
2. Manufacturing	1716	15	2376
3. Transportation	2646	4599	18688
4. Use	0	0	0
5. End of Life	0	0	0
Sum	267	19915	108246

Human Health Cancer by Sorted Flows*

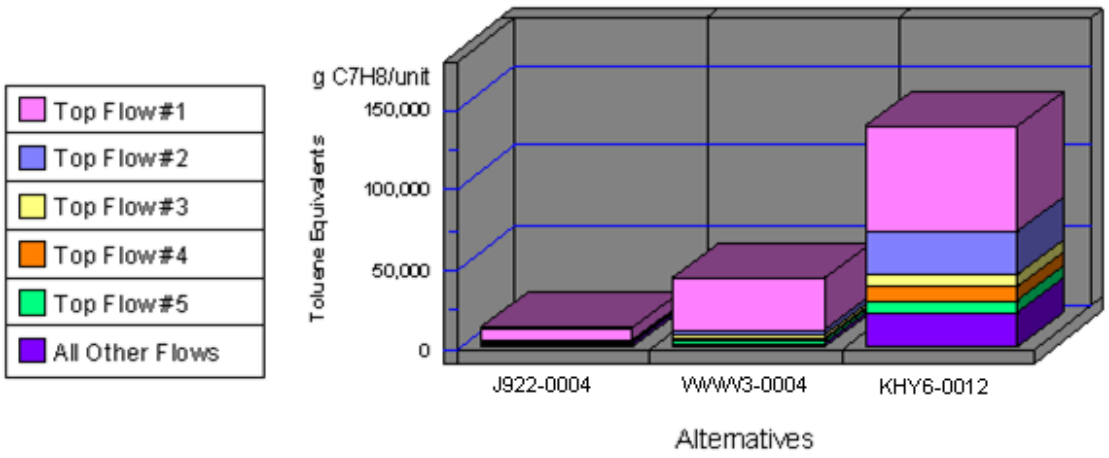


Note: Lower values are better

Category	J922-0004	WWW3-0004	KHY6-0012
Cancer--(w) Arsenic (As3+,	2.53	3.87	38.75
Cancer--(w) Phenol (C6H5OH)	1.38	5.16	20.92
Cancer--(a) Dioxins (unspecifie	0.74	1.88	6.33
Cancer--(a) Arsenic (As)	0.88	1.52	4.87
Cancer--(a) Benzene (C6H6)	0.11	0.12	1.76
All Others	3.24	0.16	0.82
Sum	8.88	12.71	73.45

*Sorted by five topmost flows for worst-scoring product

Human Health Noncancer by Sorted Flows*



Note: Lower values are better

Category	J922-0004	WWW3-0004	KHY6-0012
Noncancer–(a) Mercury (Hg)	7,029.41	32,039.29	65,068.94
Noncancer–(w) Mercury (Hg+,	429.04	3,194.25	26,925.94
Noncancer--(a) Dioxins (unspeci	936.08	2,374.33	7,976.74
Noncancer–(w) Lead (Pb++,	435.68	1,026.82	7,935.44
Noncancer--(w) Barium (Ba++)	681.24	2,190.39	7,503.34
All Others	2,600.26	2,858.98	22,231.78
Sum	12,111.71	43,684.06	137,642.18

*Sorted by five topmost flows for worst-scoring product